

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: PIONEER LAKE	Lake Area (ha):	21.04
Town: STODDARD	Maximum depth (m):	3.3
County: Cheshire	Mean depth (m):	1.6
River Basin: Merrimack	Volume (m ³):	343500
Latitude: 43°06'52" N	Relative depth:	0.6
Longitude: 72°03'58" W	Shore configuration:	1.31
Elevation (ft): 1345	Areal water load (m/yr):	5.56
Shore length (m): 2130	Flushing rate (yr ⁻¹):	3.40
Watershed area (ha): 186.3	P retention coeff.:	0.64
% watershed ponded: 0.0	Lake type:	artificial

<u>BIOLOGICAL:</u>		21 January 1997	30 August 1996
DOM. PHYTOPLANKTON (% TOTAL)	#1	SPARSE - NO DOMINANT	DINOBRYON 45%
	#2		ANACYSTIS 25%
	#3		
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			20.09
DOM. ZOOPLANKTON (% TOTAL)	#1	ASPLANCHNA 54%	TRICHOCERCA 26%
	#2	KERATELLA 18%	NAUPLIUS LARVA 14%
	#3	CONOCHILOIDES 18%	POLYARTHRA 13%
ROTIFERS/LITER		35	917
MICROCRUSTACEA/LITER		1	367
ZOOPLANKTON ABUNDANCE (#/L)		39	1357
VASCULAR PLANT ABUNDANCE			Common/Abun
SECCHI DISK TRANSPARENCY (m)			1.7
BOTTOM DISSOLVED OXYGEN (mg/L)		2.9	6.2
BACTERIA (E. coli, #/100 ml)	#1		< 10
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None
Hypolimnion volume (m³) : None
Anoxic volume (m³) : None

CHEMICAL:

Lake: PIONEER LAKE
Town: STODDARD

	21 January 1997		30 August 1996		
DEPTH (m)	1.0	2.0	1.5		
pH (units)	5.3	5.2	5.7		
A.N.C. (Alkalinity)	2.8	2.3	1.6		
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		
TOTAL KJELDAHL NITROGEN	0.61	0.78	0.26		
TOTAL PHOSPHORUS	0.022	0.023	0.021		
CONDUCTIVITY (μ mhos/cm)	22.1	20.8	17.8		
APPARENT COLOR (cpu)	38	38	35		
MAGNESIUM			0.28		
CALCIUM			1.2		
SODIUM			< 1.0		
POTASSIUM			< 0.40		
CHLORIDE	< 2	< 2	< 2		
SULFATE	3	3	3		
TN : TP	28	34	12		
CALCITE SATURATION INDEX			5.3		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1996

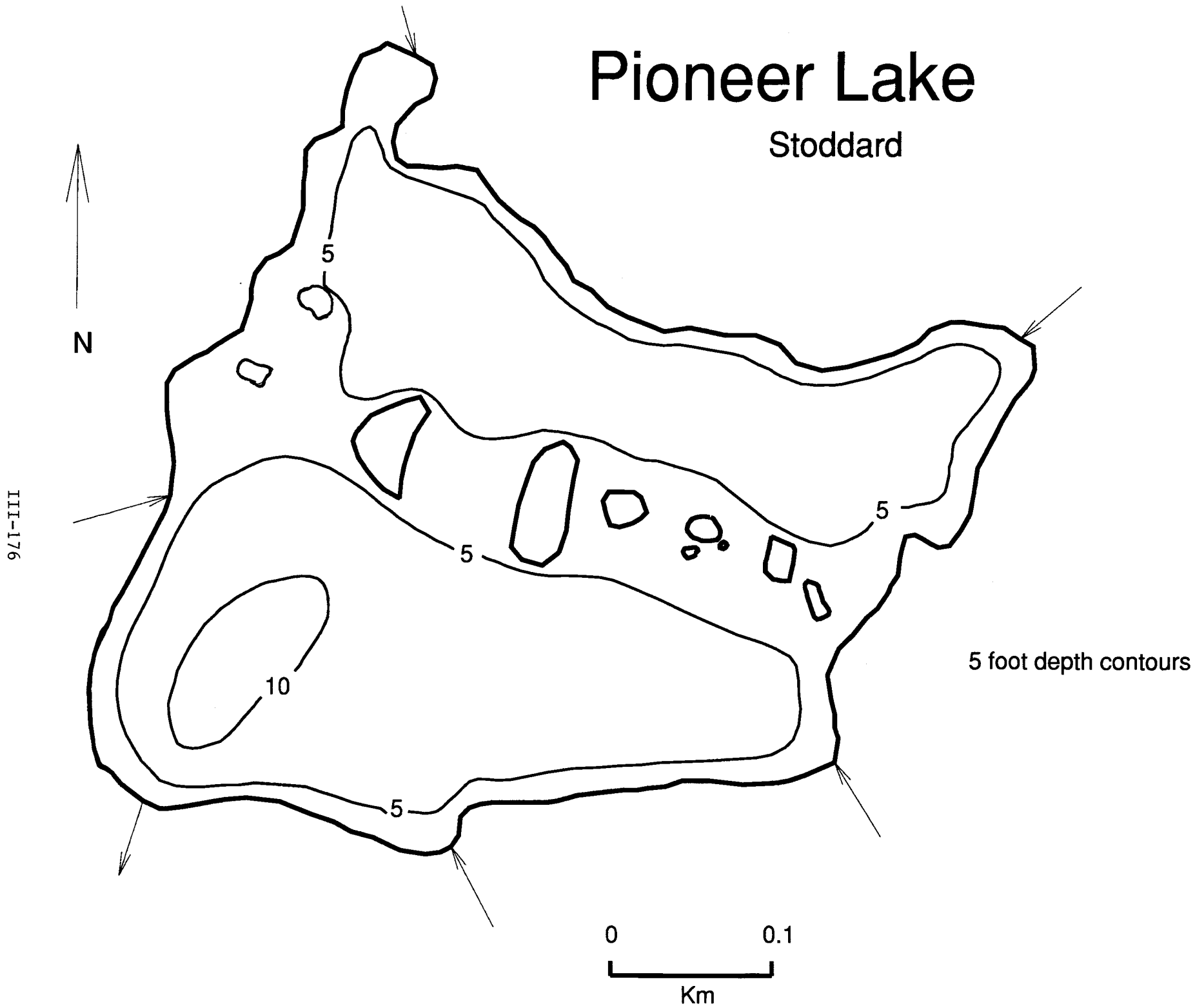
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	4	4	12	Eutro.

COMMENTS:

1. Pioneer Lake is a lightly tea-colored, moderately acidic, manmade eutrophic lake. Originally slated for development in the early 1980s, the pond and surrounding land now has a conservation easement and is part of several contiguous protected land parcels that create a wildlands preserve.
2. Access to this protected pond is controlled by two gates.
3. Water was cloudy, probably from suspended organic matter.
4. The abundant zooplankton counts demonstrate that the high primary productivity is carried up the food chain.
5. The pond consists of two shallow basins separated by an even shallower area dotted with small islands.

Pioneer Lake

Stoddard



FIELD DATA SHEET

LAKE: PIONEER LAKE TOWN: STODDARD
DATE: 08/30/96 WEATHER: SUNNY, WARM

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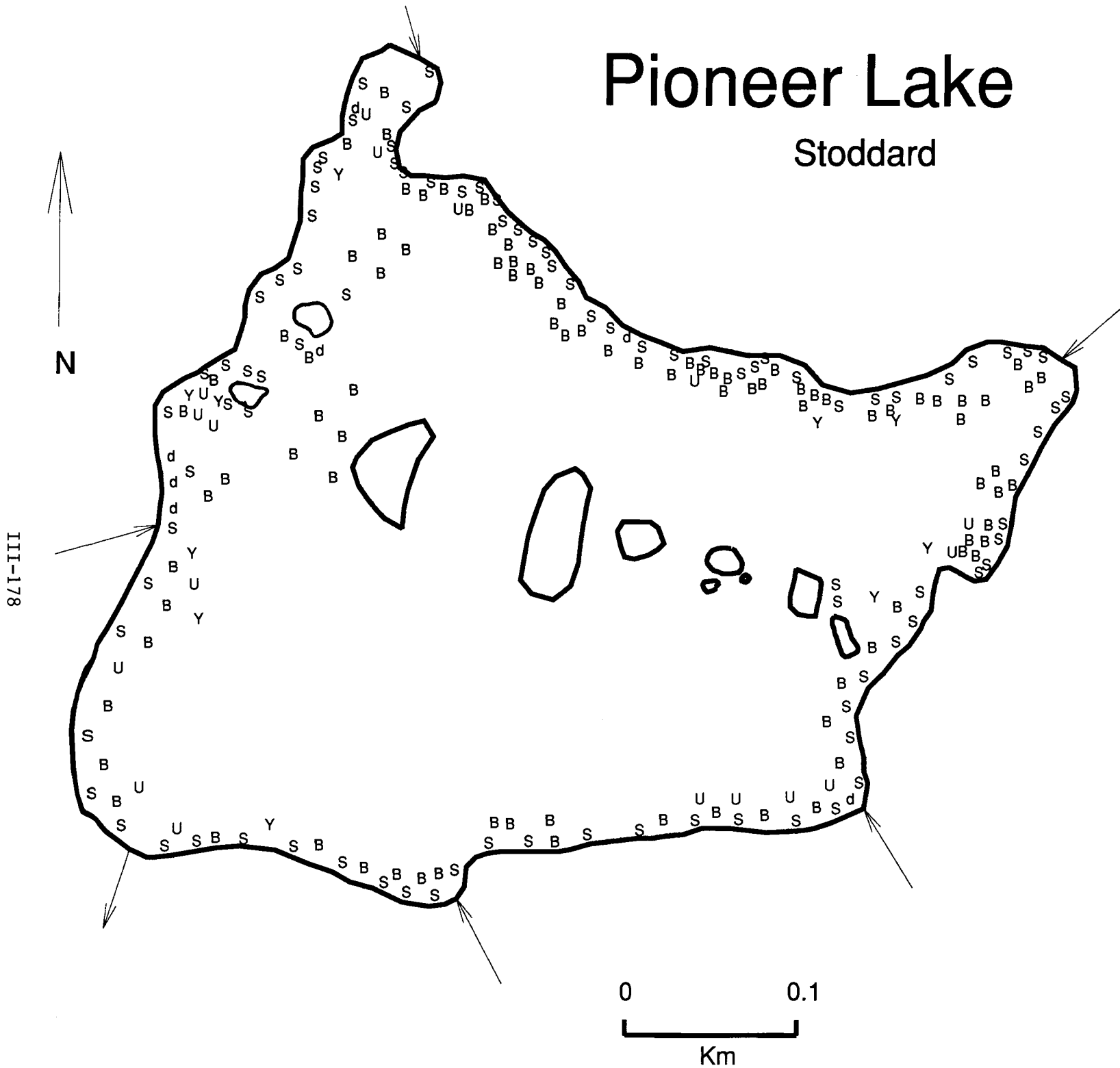
SECCHI DISK (m):	1.7	COMMENTS:
BOTTOM DEPTH (m):	3.2	
TIME:	1130	
*Dissolved oxygen values are in mg/L		

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Pioneer Lake

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